CHAPTER OVERVIEW

Chapter 6 explores how we select, organize, and interpret our sensations into meaningful perceptions. The chapter introduces a wide range of terminology, especially in the Perceptual Organization section. Each of the two sections that follow deals with an important issue. The first issue is the role of experience, as opposed to heredity, in perception. Make sure you understand the results of studies of recovery from blindness, sensory deprivation, adaptation to distorted environments, and perceptual set. Note also the role of psychologists in human factors design.

The second issue considered in the chapter is the possible existence of ESP, or perception without sensation. You should be able to discuss both the claims made for ESP and the criticisms of these claims.

NOTE: Answer guidelines for all Chapter 6 questions begin on page 168.

CHAPTER REVIEW

First, skim each section, noting headings and boldface items. After you have read the section, review each objective by answering the fill-in and essay-type questions that follow it. As you proceed, evaluate your performance by consulting the answers beginning on page 168. Do not continue with the next section until you understand each answer. If you need to, review or reread the section in the textbook before continuing.

1. The philosopher ___________________ first proposed that we perceive objects through the senses, with the mind.

Selective Attention (pp. 237–240)

David Myers at times uses idioms that are unfamiliar to some readers. If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to page 175 for an explanation: your attentional spotlight shifts; you may draw a blank; sauntered; pop-out.

Objective 1: Describe the interplay between attention and perception.

1. Our tendency to focus at any moment on only a limited aspect of all that we are capable of experiencing is called ___________________. This is illustrated using a figure called a ______________ cube.

2. An example of this limited focus is the ___________________—the ability to attend selectively to only one voice among many.

3. One example of our lack of awareness of happenings around us is ___________________, in which—after a brief ______________ interruption—we fail to notice a change in the environment. Two forms of this phenomenon that involve vision and hearing, respectively, are ___________________ and ___________________.

Another example is ___________________.

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**Perceptual Illusions** (pp. 240–242)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to page 175 for an explanation: ventriloquist’s dummy, more to touch than meets the skin.

**Objective 2:** Explain how illusions help us to understand some of the ways we organize stimuli into meaningful perceptions.

1. Illusions reveal the ways we normally ________ and ________ our sensations.

2. The tendency of vision to dominate the other senses is referred to as ________.

3. In a contest between hearing and touch, ________ dominates.

**Perceptual Organization** (pp. 242–254)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to pages 175–176 for an explanation: yen; Sometimes, however, they lead us astray; mothers then coaxed them to crawl out onto the glass; The floating finger sausage; As we move, objects that are actually stable may appear to move; by flashing 24 still pictures; through a paper tube; carpentered.

**Objective 3:** Describe Gestalt psychology’s contribution to our understanding of perception.

1. According to the ________ school of psychology, we tend to organize a cluster of sensations into a ________, or form.

2. Our tendency to perceive complete forms involves sensory analysis, or ________ processing of stimuli, as well as ________, processing that uses our ________ to interpret our sensations. The distinction between sensation and perception in terms of these two types of information processing is ________ (clear cut/fuzzy).

3. When we view a scene, we see the central object, or ________, as distinct from surrounding stimuli, or the ________.

Identify the major contributions of Gestalt psychology to our understanding of perception.

4. Proximity, similarity, closure, continuity, and connectedness are examples of Gestalt rules of ________.

5. The principle that we organize stimuli into smooth, continuous patterns is called ________. The principle that we fill in gaps to create a complete, whole object is ________. The grouping of items that are close to each other is the principle of ________; the grouping of items that look alike is the principle of ________. The tendency to perceive uniform or attached items as a single unit is the principle of ________.

**Objective 5:** Explain the importance of depth perception, and discuss the contribution of visual cliff research to our understanding of this ability.

6. The ability to see objects in three dimensions despite their two-dimensional representations on our retinas is called ________. ________. It enables us to estimate ________.
7. Gibson and Walk developed the _______________ to test depth perception in infants. By ________________ (what age?) infants demonstrate they are using Gestalt perception principles.

Summarize the results of Gibson and Walk’s studies of depth perception.

Objective 6: Describe two binocular cues for perceiving depth, and explain how they help the brain to compute distance.

For questions 8–19, identify the depth perception cue that is defined.

8. Any cue that requires both eyes: ________________.

9. The greater the difference between the images received by the two eyes, the nearer the object: ________________ . 3-D movies simulate this cue by photographing each scene with two cameras. This chapter’s fundamental lesson is that our ________________ are the constructions of our ________________ .

10. The more our eyes focus inward when we view an object, the nearer the object: ________________ .

Objective 7: Explain how monocular cues differ from binocular cues, and describe several monocular cues for perceiving depth.

11. Any cue that requires either eye alone: ________________ .

12. If two objects are presumed to be the same size, the one that casts a smaller retinal image is perceived as farther away: ________________ .

13. An object partially covered by another is seen as farther away: ________________ .

14. Objects that appear hazy are seen as farther away: ________________ .

15. As an object becomes increasingly distant, it appears progressively less distinct: ________________ .

16. Objects lower in the visual field are seen as nearer: ________________ .

17. As we move, objects at different distances appear to move at different rates: ________________ .

18. Parallel lines appear to converge in the distance: ________________ .

19. Dimmer, or shaded, objects seem farther away: ________________ .

Objective 8: State the basic assumption we make in our perceptions of motion, and explain how these perceptions can be deceiving.

20. In general, we are ________________ (very good/not very good) at quickly detecting the speed of moving objects. Sometimes, we are fooled because larger objects seem to move ________________ (faster/more slowly) than smaller objects.

21. The brain interprets a rapid series of slightly varying images as ________________ . This phenomenon is called ________________ .

22. The illusion of movement that results when two adjacent stationary spots of light blink on and off in quick succession is called the ________________ .

Objective 9: Explain the importance of perceptual constancy.

23. Our tendency to see objects as unchanging while the stimuli from them change in size, shape, and lightness is called ________________ .

24. This ________________ (bottom-up/top-down) process enables us to identify things regardless of the ________________ , ________________ , or ________________ by which we view them.
Objective 10: Describe the shape and size constancies, and explain how our expectations about perceived size and distance contribute to some visual illusions.

25. Due to shape and size constancy, familiar objects _________________ (do/do not) appear to change shape or size despite changes in our _________________ images of them.

26. Several illusions, including the _________________, _________________, and _________________-_______________ illusions, are explained by the interplay between perceived _________________ and perceived _________________. When distance cues are removed, these illusions are _________________ (diminished/strengthened).

Explain how the size-distance relationship accounts for the Moon illusion.

Objective 12: Describe the contribution of restored-vision and sensory deprivation research in our understanding of the nature-nurture interplay in our perceptions.

1. The idea that knowledge comes from inborn ways of organizing sensory experiences was proposed by the philosopher _________________.

2. On the other side were philosophers who maintained that we learn to perceive the world by experiencing it. One philosopher of this school was _________________.

3. Studies of cases in which vision has been restored to a person who was blind from birth show that, upon seeing tactiley familiar objects for the first time, the person _________________ (can/cannot) recognize them.

4. Studies of sensory deprivation demonstrate that visual experiences during ________________ are crucial for perceptual development. Such experiences suggest that there is a _________________ for normal sensory and perceptual development. For this reason, human infants born with an opaque lens, called a _________________, typically have corrective surgery right away.

Objective 13: Explain how the research on distorting goggles increases our understanding of the adaptability of perception.

5. Humans given glasses that shift or invert the visual field _________________ (will/will not) adapt to the distorted perception. This is called _________________.

6. Animals such as chicks _________________ (adapt/do not adapt) to distorting lenses.
7. When distorting goggles are first removed, most people experience a brief perceptual
______________, as their perceptual systems continue to compensate for the shifted visual
input.

Objective 14: Define perceptual set, and explain how it influences what we do or do not perceive.

8. A mental predisposition that influences perception is called a ________________
______________.

9. Through experience, people acquire perceptual ________________, as reflected in children’s
drawings at different ages. This explains why we more accurately recognize ________________
of famous faces than these people’s actual faces.

10. Our face recognition is especially attuned to the expressive areas of the ________________ and
______________.

Objective 15: Explain why the same stimulus can evoke different perceptions in different contexts.

11. How a stimulus is perceived depends on our perceptual schemas and the ________________ in which it is experienced.

12. The context of a stimulus creates a ________________ (top-down/bottom-up)
expectation that influences our perception as we match our ________________ (top-down/bot-
bottom-up) signal against it.

13. Our perception is also influenced by ________________ about gender and the ________________ context of our experiences.

Objective 16: Describe the role human factors psychologists play in creating user-friendly machines
and work settings.

14. Psychologists who study the importance of considering perceptual principles in the design of
machines, appliances, and work settings are called ________________ psychologists.

15. Victims of the “curse of knowledge,” technology developers who assume that others share their
______________, may create designs that are unclear to others.

16. Another example of failure to consider the human factor in design is the
______________ technology that provides embarrassing headsets that amplify sound for people with hearing loss.

Is There Extrasensory Perception? (pp. 264–268)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to page 176 for an explanation: uncanny; mind-blowing performance; unsatisfied hunger . . . an itch.

Objective 17: Identify the three most testable forms of ESP, and explain why most research psychologists
remain skeptical of ESP claims.

1. Perception outside the range of normal sensation is called ________________
______________.

2. Psychologists who study ESP are called ________________.

3. The form of ESP in which people claim to be capable of reading others’ minds is called
______________. A person who “senses” that a friend is in danger might claim to have the
ESP ability of ________________. An ability to “see” into the future is called
______________. A person who claims to be able to levitate and move objects is claiming the
power of ________________.

4. Analyses of psychic visions and premonitions reveal ________________ (high/chance-level)
accuracy. Nevertheless, some people continue to believe in their accuracy because vague predic-
tions often are later ________________ to match events that have already occurred. In addition,
people are more likely to recall or ________________ dreams that seem to have come true.

5. Critics point out that a major difficulty for parapsychology is that ESP phenomena are not con-
sistently ________________.
6. Researchers who tried to reduce external distractions between a “sender” and a “receiver” in an ESP experiment reported performance levels that _____________ (beat/did not beat) chance levels. More recent studies ________________ (failed to replicate the results/found equally high levels of performance).

**PROGRESS TEST 1**

**Multiple-Choice Questions**

Circle your answers to the following questions and check them with the answers beginning on page 169. If your answer is incorrect, read the explanation for why it is incorrect and then consult the appropriate pages of the text (in parentheses following the correct answer).

1. The historical movement associated with the statement “The whole may exceed the sum of its parts” is:
   a. parapsychology.
   b. behavioral psychology.
   c. functional psychology.
   d. Gestalt psychology.

2. Figures tend to be perceived as whole, complete objects, even if spaces or gaps exist in the representation, thus demonstrating the principle of:
   a. connectedness.
   b. similarity.
   c. continuity.
   d. closure.

3. The figure-ground relationship has demonstrated that:
   a. perception is largely innate.
   b. perception is simply a point-for-point representation of sensation.
   c. the same stimulus can trigger more than one perception.
   d. different people see different things when viewing a scene.

4. When we stare at an object, each eye receives a slightly different image, providing a depth cue known as:
   a. convergence.
   b. linear perspective.
   c. relative motion.
   d. retinal disparity.

5. As we move, viewed objects cast changing shapes on our retinas, although we do not perceive the objects as changing. This is part of the phenomenon of:
   a. perceptual constancy.
   b. relative motion.
   c. linear perspective.
   d. continuity.

6. Which of the following illustrates the principle of visual capture?
   a. We tend to form first impressions of other people on the basis of appearance.
   b. Because visual processing is automatic, we can pay attention to a visual image and any other sensation at the same time.
   c. We cannot simultaneously attend to a visual image and another sensation.
   d. When there is a conflict between visual information and that from another sense, vision tends to dominate.

7. A person claiming to be able to read another’s mind is claiming to have the ESP ability of:
   a. psychokinesis.
   b. precognition.
   c. clairvoyance.
   d. telepathy.

8. Which philosopher maintained that knowledge comes from inborn ways of organizing our sensory experiences?
   a. Locke
   b. Kant
   c. Gibson
   d. Walk

9. Dr. Martin is using natural mapping to redesign the instrument gauges of automobiles to be more “user friendly.” Dr. Martin is evidently a(n):
   a. psychophysicist.
   b. cognitive psychologist.
   c. human factors psychologist.
   d. experimental psychologist.

10. The visual cliff tests an infant’s perceptual sensitivity to which depth cue?
    a. interposition
    b. relative height
    c. linear perspective
    d. texture gradient

11. Kittens and monkeys reared seeing only diffuse, unpatterned light:
    a. later had difficulty distinguishing color and brightness.
    b. later had difficulty perceiving color and brightness, but eventually regained normal sensitivity.
    c. later had difficulty perceiving the shape of objects.
    d. showed no impairment in perception, indicating that neural feature detectors develop even in the absence of normal sensory experiences.
12. Adults who are born blind but later have their vision restored:
   a. are almost immediately able to recognize familiar objects.
   b. typically fail to recognize familiar objects.
   c. are unable to follow moving objects with their eyes.
   d. have excellent eye-hand coordination.

13. _______ processing refers to how the physical characteristics of stimuli influence their interpretation.
   a. Top-down
   b. Bottom-up
   c. Parapsychological
   d. Human factors

14. Which of the following is not a monocular depth cue?
   a. texture gradient
   b. relative height
   c. retinal disparity
   d. interposition

15. The Moon illusion occurs in part because distance cues at the horizon make the Moon seem:
   a. farther away and therefore larger.
   b. closer and therefore larger.
   c. farther away and therefore smaller.
   d. closer and therefore smaller.

16. Figure is to ground as ______ is to ______.
   a. night; day
   b. top; bottom
   c. cloud; sky
   d. sensation; perception

17. The study of perception is primarily concerned with how we:
   a. detect sights, sounds, and other stimuli.
   b. sense environmental stimuli.
   c. develop sensitivity to illusions.
   d. interpret sensory stimuli.

18. Which of the following influences perception?
   a. biological maturation
   b. the context in which stimuli are perceived
   c. expectations
   d. all of the above

19. Jack claims that he often has dreams that predict future events. He claims to have the power of:
   a. telepathy.
   b. clairvoyance.
   c. precognition.
   d. psychokinesis.

20. Researchers who investigated telepathy found that:
   a. when external distractions are reduced, both the “sender” and the “receiver” become much more accurate in demonstrating ESP.
   b. only “senders” become much more accurate.
   c. only “receivers” become much more accurate.
   d. over many studies, none of the above occur.

True–False Items

Indicate whether each statement is true or false by placing T or F in the blank next to the item.

   ______ 1. Once we perceive an item as a figure, it is impossible to see it as ground.
   ______ 2. Laboratory experiments have laid to rest all criticisms of ESP.
   ______ 3. Six-month-old infants will cross a visual cliff if their mother calls.
   ______ 4. Unlike other animals, humans have no critical period for visual stimulation.
   ______ 5. Immanuel Kant argued that experience determined how we perceive the world.
   ______ 6. People who live in a carpentered world are more likely than others to experience the Müller-Lyer illusion.
   ______ 7. After a period of time, humans are able to adjust to living in a world made upside down by distorting goggles.
   ______ 8. As our distance from an object changes, the object’s size seems to change.
   ______ 9. Perception is influenced by psychological factors such as set and expectation as well as by physiological events.
   ______ 10. John Locke argued that perception is inborn.

**Progress Test 2**

Progress Test 2 should be completed during a final chapter review. Answer the following questions after you thoroughly understand the correct answers for the section reviews and Progress Test 1.

1. The tendency to organize stimuli into smooth, uninterrupted patterns is called:
   a. closure.
   b. continuity.
   c. similarity.
   d. proximity.

2. Which of the following is a monocular depth cue?
   a. light and shadow
   b. convergence
   c. retinal disparity
   d. All of the above are monocular depth cues.
3. Which of the following statements is consistent with the Gestalt theory of perception?
   a. Perception develops largely through learning.
   b. Perception is the product of heredity.
   c. The mind organizes sensations into meaningful perceptions.
   d. Perception results directly from sensation.

4. Experiments with distorted visual environments demonstrate that:
   a. adaptation rarely takes place.
   b. animals adapt readily, but humans do not.
   c. humans adapt readily, while lower animals typically do not.
   d. adaptation is possible during a critical period in infancy but not thereafter.

5. The phenomenon that refers to the ways in which an individual's expectations influence perception is called:
   a. perceptual set.
   b. retinal disparity.
   c. convergence.
   d. visual capture.

6. Thanks to ________, TiVo and DVR have solved the TV recording problem caused by the complexity of VCRs.
   a. parapsychologists
   b. human factors psychologists
   c. psychokineticists
   d. Gestalt psychologists

7. According to the philosopher ________, we learn to perceive the world.
   a. Locke
   b. Kant
   c. Gibson
   d. Walk

8. The tendency to perceive hazy objects as being at a distance is known as ________ . This is a ______ depth cue.
   a. linear perspective; binocular
   b. linear perspective; monocular
   c. relative clarity; binocular
   d. relative clarity; monocular

9. The phenomenon of size constancy is based upon the close connection between an object’s perceived ______ and its perceived ______.
   a. size; shape
   b. size; distance
   c. size; brightness
   d. shape; distance

10. Which of the following statements best describes the effects of sensory restriction?
    a. It produces functional blindness when experienced for any length of time at any age.
    b. It has greater effects on humans than on animals.
    c. It has more damaging effects when experienced during infancy.
    d. It has greater effects on adults than on children.

11. Psychologists who study ESP are called:
    a. clairvoyants.
    b. telepaths.
    c. parapsychologists.
    d. levitators.

12. The depth cue that occurs when we watch stable objects at different distances as we are moving is:
    a. convergence.
    b. interposition.
    c. relative clarity.
    d. relative motion.

13. Which of the following statements concerning ESP is true?
    a. Most ESP researchers are quacks.
    b. There have been a large number of reliable demonstrations of ESP.
    c. Most research psychologists are skeptical of the claims of defenders of ESP.
    d. There have been reliable laboratory demonstrations of ESP, but the results are no different from those that would occur by chance.

14. Each time you see your car, it projects a different image on the retinas of your eyes, yet you do not perceive it as changing. This is because of:
    a. perceptual set.
    b. retinal disparity.
    c. perceptual constancy.
    d. convergence.

15. The term gestalt means:
    a. grouping.
    b. sensation.
    c. perception.
    d. whole.

16. The perceptual error in which we fail to see an object when our attention is directed elsewhere is:
    a. visual capture.
    b. inattentional blindness.
    c. perceptual adaptation.
    d. divergence.

17. Studies of the visual cliff have provided evidence that much of depth perception is:
    a. innate.
    b. learned.
    c. innate in lower animals, learned in humans.
    d. innate in humans, learned in lower animals.

18. All of the following are laws of perceptual organization except:
    a. proximity.
    b. closure.
    c. continuity.
    d. convergence.
19. You probably perceive the diagram above as three separate objects due to the principle of:
   a. proximity.        b. continuity.        c. closure.        d. connectedness.

20. ________ processing refers to how our knowledge and expectations influence perception.

**PSYCHOLOGY APPLIED**

Answer these questions the day before an exam as a final check on your understanding of the chapter’s terms and concepts.

**Multiple-Choice Questions**

1. Although carpenter Smith perceived a briefly viewed object as a screwdriver, police officer Wesson perceived the same object as a knife. This illustrates that perception is guided by:
   a. linear perspective.        b. shape constancy.        c. retinal disparity.        d. perceptual set.

2. Because the flowers in the foreground appeared coarse and grainy, the photographer decided that the picture was taken too near the subject. This conclusion was based on which depth cue?
   a. relative size        b. interposition        c. retinal disparity        d. texture gradient

3. The fact that a white object under dim illumination appears lighter than a gray object under bright illumination is called:
   a. relative luminance.        b. perceptual adaptation.        c. color contrast.        d. lightness constancy.

4. When two familiar objects of equal size cast unequal retinal images, the object that casts the smaller retinal image will be perceived as being:
   a. closer than the other object.        b. more distant than the other object.        c. larger than the other object.        d. smaller than the other object.

5. If you slowly bring your finger toward your face until it eventually touches your nose, eye-muscle cues called ________ convey depth information to your brain.
   a. retinal disparity        b. continuity

6. Concluding her presentation on sensation and perception, Kelly notes that:
   a. sensation is bottom-up processing.        b. perception is top-down processing.        c. a. and b. are both true.        d. sensation and perception blend into one continuous process.

7. As her friend Milo walks toward her, Noriko perceives his size as remaining constant because his perceived distance ________ at the same time that her retinal image of him ________.
   a. increases; decreases        b. increases; increases        c. decreases; decreases        d. decreases; increases

8. In the absence of perceptual constancy:
   a. objects would appear to change size as their distance from us changed.        b. depth perception would be based exclusively on monocular cues.        c. depth perception would be based exclusively on binocular cues.        d. depth perception would be impossible.

9. The illusion that the St. Louis Gateway arch appears taller than it is wide (even though its height and width are equal) is based on our sensitivity to which monocular depth cue?
   a. relative size        b. interposition        c. relative height        d. retinal disparity

10. How do we perceive a pole that partially covers a wall?
    a. as farther away        b. as nearer        c. as larger        d. There is not enough information to determine the object’s size or distance.

11. An artist paints a tree orchard so that the parallel rows of trees converge at the top of the canvas. Which cue has the artist used to convey distance?
    a. interposition        b. relative clarity        c. linear perspective        d. texture gradient

12. Objects higher in our field of vision are perceived as ________ due to the principle of ________.
    a. nearer; relative height        b. nearer; linear perspective        c. farther away; relative height        d. farther away; linear perspective
13. According to the principle of light and shadow, if one of two identical objects reflects more light to your eyes it will be perceived as:
   a. larger.  
   b. smaller.  
   c. farther away.  
   d. nearer.

14. Your friend tosses you a frisbee. You know that it is getting closer instead of larger because of:
   a. shape constancy.  
   b. relative motion.  
   c. size constancy.  
   d. all of the above.

15. Which explanation of the Müller-Lyer illusion is offered by the text?
   a. The corners in our carpentered world teach us to interpret outward- or inward-pointing arrowheads at the end of a line as a cue to the line’s distance from us and so to its length.
   b. The drawing’s violation of linear perspective makes one line seem longer.
   c. Top-down processing of the illusion is prevented because of the stimuli’s ambiguity.
   d. All of the above were offered as explanations.

16. When the traffic light changed from red to green, the drivers on both sides of Leon’s vehicle pulled quickly forward, giving Leon the disorienting feeling that his car was rolling backward. Which principle explains Leon’s misperception?
   a. relative motion  
   b. continuity  
   c. visual capture  
   d. proximity

17. Regina claims that she can bend spoons, levitate furniture, and perform many other “mind over matter” feats. Regina apparently believes she has the power of:
   a. telepathy.  
   b. clairvoyance.  
   c. precognition.  
   d. psychokinesis.

18. The predictions of leading psychics are:
   a. often ambiguous prophecies later interpreted to match actual events.
   b. no more accurate than guesses made by others.
   c. nearly always inaccurate.
   d. all of the above.

19. Studying the road map before her trip, Colleen had no trouble following the route of the highway she planned to travel. Colleen’s ability illustrates the principle of:
   a. closure.  
   b. similarity.  
   c. continuity.  
   d. proximity.

20. The insensitivity of many rural Africans to the Müller-Lyer illusion proves that perception:
   a. is largely a “bottom-up” phenomenon.
   b. is unpredictable.
   c. is influenced by cultural experience.
   d. is characterized by all of the above.

**Essay Question**

In many movies from the 1930s, dancers performed seemingly meaningless movements which, when viewed from above, were transformed into intricate patterns and designs. Similarly, the formations of marching bands often create pictures and spell words. Identify and describe at least four Gestalt principles of grouping that explain the audience’s perception of the images created by these types of formations. (Use the space below to list the points you want to make, and organize them. Then write the essay on a separate piece of paper.)

**KEY TERMS**

**Writing Definitions**

Using your own words, on a separate piece of paper write a brief definition or explanation of each of the following terms.

1. selective attention
2. inattentional blindness
3. visual capture
4. gestalt
5. figure-ground
6. grouping
7. depth perception
8. visual cliff
9. binocular cue
10. retinal disparity
11. convergence
12. monocular cue
13. phi phenomenon
14. perceptual constancy
15. perceptual adaptation
16. perceptual set

17. human factors psychology
18. extrasensory perception (ESP)
19. parapsychology

Cross-Check
As you learned in the Prologue, reviewing and overlearning of material are important to the learning process. After you have written the definitions of the key terms in this chapter, you should complete the crossword puzzle to ensure that you can reverse the process—recognize the term, given the definition.

ACROSS
1. Part of the visual field that surrounds the figure.
8. The tendency to perceive the convergence of parallel lines as indicating decreasing distance is the ______ perspective.
13. Depth cues that depend on information from both eyes.
15. Principle that we tend to group stimuli that are near one another.
16. Part of the visual field that stands out from its surroundings.
17. Philosopher who believed that all knowledge arises from experience.
18. Perceptual tendency to fill in incomplete figures to create the perception of a whole object.
19. Process by which we tend to organize stimuli into coherent groups.
20. Means “organized whole.”

DOWN
2. Figure-ground relationships are often ______.
3. Creating three-dimensional perceptions from the two-dimensional images that strike the retina requires ______ perception.
4. The ability to attend to only one voice among many is the ______ effect.
5. Because of ______ attention, we focus our aware-

ness on only a limited aspect of all that we are capable of experiencing.
6. Illusion of movement created by adjacent lights that blink off and on in succession.
7. Classic visual illusion involving the perception of line length.
9. Depth cue in which nearby objects partially obscure more distant objects.
10. The amount of light an object reflects relative to its surroundings.
11. Tendency of distant objects to appear hazier than nearer objects.
12. Gestalt principle that we perceive uniform and linked spots, lines, or areas as a single unit.
14. The irreversible effects of sensory restriction during infancy suggest the existence of a ______ for normal sensory and perceptual development.
ANSWERS

Chapter Review

1. Plato

Selective Attention

1. selective attention; Necker
2. cocktail party effect
3. inattentive blindness; visual; change blindness; change deafness; choice blindness

Perceptual Illusions

1. organize; interpret
2. visual capture
3. hearing

Perceptual Organization

1. Gestalt; whole
2. bottom-up; top-down; experiences; expectations; fuzzy
3. figure; ground

The Gestalt psychologists described some key principles of perceptual organization and, in so doing, demonstrated that perception is far more than a simple sensory process. The reversible figure-ground relationship, for example, demonstrates that a single stimulus can trigger more than one perception. As Gestalt psychologists showed, we continually filter sensory information and construct our perceptions in ways that make sense to us.

4. grouping
5. continuity; closure; proximity; similarity; connectedness
6. depth perception; distance
7. visual cliff; 3 months

Research on the visual cliff suggests that in many species the ability to perceive depth is present at, or very shortly after, birth.

8. binocular
9. retinal disparity; perceptions; brains
10. convergence
11. monocular
12. relative size
13. interposition
14. relative clarity
15. texture gradient

16. relative height
17. relative motion (motion parallax)
18. linear perspective
19. light and shadow
20. very good; more slowly
21. movement; stroboscopic movement
22. phi phenomenon
23. perceptual constancy
24. top-down; angle; distance; illumination
25. do not; retinal
26. Moon; Ponzo; Müller-Lyer; size; distance; diminished

A partial reason for the illusion that the Moon at the horizon appears up to 50 percent larger than the Moon directly overhead is that cues to the distance of objects at the horizon make the Moon, behind them, seem farther away and therefore larger. When we see the Moon overhead in the sky, these misleading cues are lacking.

27. less
28. relative to
29. relative luminance
30. color constancy

Perceptual Interpretation

1. Kant
2. Locke
3. cannot
4. infancy; critical period; cataract
5. will; perceptual adaptation
6. do not adapt
7. aftereffect
8. perceptual set
9. schemas; caricatures
10. eyes; mouth
11. context
12. top-down; bottom-up
13. stereotypes; emotional
14. human factors
15. expertise
16. assistive listening

Is There Extrasensory Perception?

1. extrasensory perception
2. parapsychologists
3. telepathy; clairvoyance; precognition; psychokinesis
4. chance-level; interpreted (retrofitted); reconstruct
5. reproducible
6. beat; failed to replicate the results

**Progress Test 1**

**Multiple-Choice Questions**

1. d. is the answer. Gestalt psychology, which developed in Germany early in the twentieth century, was interested in how clusters of sensations are organized into "whole" perceptions. (pp. 242-243)
   a. Parapsychology is the study of ESP and other paranormal phenomena.
   b. & c. Behavioral and functional psychology developed later in the United States.

2. d. is the answer. (p. 244)
   a. Connectedness refers to the tendency to see uniform and linked items as a unit.
   b. Similarity refers to the tendency to group similar items.
   c. Continuity refers to the tendency to group stimuli into smooth, continuous patterns.

3. c. is the answer. Although we always differentiate a stimulus into figure and ground, those elements of the stimulus we perceive as figure and those as ground may change. In this way, the same stimulus can trigger more than one perception. (p. 243)
   a. The idea of a figure-ground relationship has no bearing on the issue of whether perception is innate.
   b. Perception cannot be simply a point-for-point representation of sensation, since in figure-ground relationships a single stimulus can trigger more than one perception.
   d. Figure-ground relationships demonstrate the existence of general, rather than individual, principles of perceptual organization. Significantly, even the same person can see different figure-ground relationships when viewing a scene.

4. d. is the answer. The greater the retinal disparity, or difference between the images, the less the distance. (p. 246)
   a. Convergence is the extent to which the eyes move inward when looking at an object.
   b. Linear perspective is the monocular distance cue in which parallel lines appear to converge in the distance.
   c. Relative motion is the monocular distance cue in which objects at different distances change their relative positions in our visual image, with those closest moving most.

5. a. is the answer. Perception of constant shape, like perception of constant size, is part of the phenomenon of perceptual constancy. (p. 250)
   b. Relative motion is a monocular distance cue in which objects at different distances appear to move at different rates.
   c. Linear perspective is a monocular distance cue in which lines we know to be parallel converge in the distance, thus indicating depth.
   d. Continuity is the perceptual tendency to group items into continuous patterns.

6. d. is the answer. (p. 242)
   a., b., & c. Visual capture has nothing to do with forming impressions of people or whether we can attend to more than one stimulus at a time.

7. d. is the answer. (p. 265)
   a. Psychokinesis refers to the claimed ability to perform acts of "mind over matter."
   b. Precognition refers to the claimed ability to perceive future events.
   c. Clairvoyance refers to the claimed ability to perceive remote events.

8. b. is the answer. (p. 254)
   a. Locke argued that knowledge is not inborn but comes through learning.
   c. & d. Gibson and Walk studied depth perception using the visual cliff; they made no claims about the source of knowledge.

9. c. is the answer. (p 261)

10. d. is the answer. There is, of course, no actual drop-off. The texture gradient of the checkerboard pattern beneath the glass table imparts the impression of depth. The other cues mentioned would not be relevant to the situation in this experiment. (pp. 245, 247)

11. c. is the answer. (p. 255)
   a. & b. The kittens had difficulty only with lines they had never experienced, and never regained normal sensitivity.
   d. Both perceptual and feature-detector impairment resulted from visual deprivation.

12. b. is the answer. Because they have not had early visual experiences, these adults typically have difficulty learning to perceive objects. (p. 255)
   a. Such patients typically could not visually recognize objects with which they were familiar by touch, and in some cases this inability persisted.
   c. Being able to perceive figure-ground relation-
ships, patients are able to follow moving objects with their eyes.

d. This answer is incorrect because eye-hand coordination is an acquired skill and requires much practice.

13. b. is the answer. (p. 237)
   a. Top-down processing refers to how our knowledge and expectations influence perception.
   c. Parapsychology is the study of perception outside normal sensory input.
   d. Human factors psychology is concerned with how best to design machines and work settings to take into account human perception.

14. c. is the answer. Retinal disparity is a binocular cue; all the other cues mentioned are monocular.
   (p. 246)

15. a. is the answer. The Moon appears larger at the horizon than overhead in the sky because objects at the horizon provide distance cues that make the Moon seem farther away and therefore larger. In the open sky, of course, there are no such cues.
   (p. 251)

16. c. is the answer. We see a cloud as a figure against the background of sky.
   a, b, & d. The figure-ground relationship refers to the organization of the visual field into objects (figures) that stand out from their surroundings (ground).

17. d. is the answer. (p. 237)
   a. & b. The study of sensation is concerned with these processes.
   c. Although studying illusions has helped psychologists understand ordinary perceptual mechanisms, it is not the primary focus of the field of perception.

18. d. is the answer. (pp. 254–261)

19. c. is the answer. (p. 265)
   a. This answer would be correct had Jack claimed to be able to read someone else’s mind.
   b. This answer would be correct had Jack claimed to be able to sense remote events, such as a friend in distress.
   d. This answer would be correct had Jack claimed to be able to levitate objects or bend spoons without applying any physical force.

20. d. is the answer. (p. 267)

*True–False Items*

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**Progress Test 2**

1. b. is the answer. (p. 244)
   a. Closure refers to the tendency to perceptually fill in gaps in recognizable objects in the visual field.
   c. Similarity refers to the tendency to group items that are similar.
   d. Proximity refers to the tendency to group items that are near one another.

2. a. is the answer. (p. 248)
   b. & c. Convergence and retinal disparity are both binocular cues that depend on information from both eyes.

3. c. is the answer. (p. 243)
   a. & b. The Gestalt psychologists did not deal with the origins of perception; they were more concerned with its form.
   d. In fact, they argued just the opposite: Perception is more than mere sensory experience.

4. c. is the answer. Humans and certain animals, such as monkeys, are able to adjust to upside-down worlds and other visual distortions, figuring out the relationship between the perceived and the actual reality; lower animals, such as chickens and fish, are typically unable to adapt.
   (p. 256)
   a. Humans and certain animals are able to adapt quite well to distorted visual environments (and then to readapt).
   b. This answer is incorrect because humans are the most adaptable of creatures.
   d. Humans are able to adapt at any age to distorted visual environments.

5. a. is the answer. (p. 257)
   b. Retinal disparity is a binocular depth cue based on the fact that each eye receives a slightly different view of the world.
   c. Convergence is a binocular depth cue based on the fact that the eyes swing inward to focus on near objects.
   d. Visual capture refers to the tendency of vision to dominate the other senses.

6. b. is the answer. (p. 261)
   a. Parapsychologists study claims of ESP.
   c. Psychokineticists are people who claim ESP has the power of “mind over matter.”
   d. Gestalt psychologists emphasize the organization of sensations into meaningful perceptions.

7. a. is the answer. (p. 254)
   b. Kant claimed that knowledge is inborn.
   c. & d. Gibson and Walk make no claims about the origins of perception.
8. d. is the answer. (p. 247)
   a. & b. Linear perspective, which is a monocular cue, refers to the tendency of parallel lines to converge in the distance.
   c. Relative clarity requires only one eye and is therefore a monocular cue.
9. b. is the answer. (pp. 250–251)
10. c. is the answer. There appears to be a critical period for perceptual development, in that sensory restriction has severe, even permanently disruptive effects when it occurs in infancy but not when it occurs later in life. (p. 256)
   a. & d. Sensory restriction does not have the same effects at all ages, and it is more damaging to children than to adults. This is because there is a critical period for perceptual development; whether functional blindness will result depends in part on the nature of the sensory restriction.
   b. Research studies have not indicated that sensory restriction is more damaging to humans than to animals.
11. c. is the answer. (p. 264)
   a., b., & d. These psychics claim to exhibit the phenomena studied by parapsychologists.
12. d. is the answer. When we move, stable objects we see also appear to move, and the distance and speed of the apparent motion cue us to the objects' relative distances. (p. 248)
   a., b., & c. These depth cues are unrelated to movement and thus work even when we are stationary.
13. c. is the answer. (p. 267)
   a. Many ESP researchers are sincere, reputable researchers.
   b. & d. There have been no reliable demonstrations of ESP.
14. c. is the answer. Because of perceptual constancy, we see the car's shape and size as always the same. (p. 250)
   a. Perceptual set is a mental predisposition to perceive one thing and not another.
   b. Retinal disparity means that our right and left eyes each receive slightly different images.
   d. Convergence is a form of neuromuscular feedback in which the eyes swing in, or out, as we view objects at different distances.
15. d. is the answer. Gestalt means a "form" or "organized whole." (p. 242)
16. b. is the answer. (pp. 238)
   a. Visual capture is the tendency for vision to dominate the other senses.
   c. Perceptual adaptation is the ability to adjust to an artificially displaced or even inverted visual field.
   d. Divergence or divergent thinking is not discussed in this chapter.
17. a. is the answer. Most infants refused to crawl out over the "cliff" even when coaxed, suggesting that much of depth perception is innate. Studies with the young of "lower" animals show the same thing. (p. 245)
18. d. is the answer. (p. 244)
19. d. is the answer. (p. 244)
   a. Proximity is the tendency to group objects near to one another. The diagram is perceived as three distinct units, even though the points are evenly spaced.
   b. Continuity is the tendency to group stimuli into smooth, uninterrupted patterns. There is no such continuity in the diagram.
   c. Closure is the perceptual tendency to fill in gaps in a form. In the diagram, three disconnect ed units are perceived rather than a single whole.
20. a. is the answer. (p. 237)
   b. Bottom-up processing refers to the physical characteristics of stimuli rather than their perceptual interpretation.
   c. Parapsychology is the study of perception outside normal sensory input.
   d. Human factors psychology is concerned with how best to design machines and work settings to take into account human perception.

Psychology Applied

Multiple-Choice Questions

1. d. is the answer. The two people interpreted a briefly perceived object in terms of their perceptual sets, or mental predispositions, in this case conditioned by their work experiences. (p. 257)
   a. Both Smith and Wesson had the same sensory experience of the object, so linear perspective cues would not cause their differing perceptions.
   b. Shape constancy refers to the perception that objects remain constant in shape even when our retinal images of them change.
   c. Retinal disparity is a binocular depth cue; it has nothing to do with individual differences in perception.
2. d. is the answer. When the texture of an object is coarse and grainy, we perceive the object as nearer than when its texture is finer and less distinct. (p. 247)
   a. & b. Relative size and interposition are used to judge the relative distances of two or more objects; because only one photograph was involved, these cues are irrelevant.
c. Retinal disparity refers to the different images our eyes receive; whether the photograph's texture was coarse or fine, the retinal disparity would be the same.

3. d. is the answer. Although the amount of light reflected from a white object is less in dim light than in bright light—and may be less than the amount of light reflected from a brightly lit gray object—the brightness of the white object is perceived as remaining constant. Because a white object reflects a higher percentage of the light falling on it than does a gray object, and the brightness of objects is perceived as constant despite variations in illumination, white is perceived as brighter than gray even under dim illumination. (p. 253)
   a. Relative luminance refers to the relative intensity of light falling on surfaces that are in proximity. Lightness constancy is perceived despite variations in illumination.
   b. Perceptual adaptation refers to the ability to adjust to an artificially modified perceptual environment, such as an inverted visual field.
   c. Color contrast is not discussed in this text.

4. b. is the answer. The phenomenon described is the basis for the monocular cue of relative size. (p. 246)
   a. The object casting the larger retinal image would be perceived as closer.
   c. & d. Because of size constancy, the perceived size of familiar objects remains constant, despite changes in their retinal image size.

5. d. is the answer. As an object comes closer in our field of vision, the eyes swing inward (converge) and provide muscular cues as to the object's distance. (p. 246)
   a. Retinal disparity refers to the slightly different images of an object received by the two eyes due to their different angles of viewing.
   b. Interposition is a monocular cue to distance in which an object that partially blocks another is seen as closer.
   c. Continuity is a Gestalt grouping principle, rather than a distance cue.

6. d. is the answer. (p. 243)

7. d. is the answer. (p. 251)

8. a. is the answer. Because we perceive the size of a familiar object as constant even as its retinal image grows smaller, we perceive the object as being farther away. (pp. 250–251)
   b. & c. Perceptual constancy is a cognitive, rather than sensory, phenomenon. Therefore, the absence of perceptual constancy would not alter sensitivity to monocular or binocular cues.
   d. Although the absence of perceptual constancy would impair depth perception based on the size-distance relationship, other cues to depth, such as texture gradient, could still be used.

9. c. is the answer. We perceive objects higher in our field of vision as farther away. Thus, the brain perceives a vertical line the same length as a horizontal line to be more distant and mentally adjusts its apparent length to make it seem longer. (pp. 241, 247)
   a. & b. These monocular cues are irrelevant in this particular illusion.
   d. Retinal disparity is a binocular cue to depth.

10. b. is the answer. This is an example of the principle of interposition in depth perception. (p. 246)
    a. The partially obscured object is perceived as farther away.
    c. The perceived size of an object is not altered when that object overlaps another.

11. c. is the answer. (pp. 248, 249)
    a. Interposition is a monocular depth cue in which an object that partially covers another is perceived as closer.
    b. Had the artist painted the trees so that the images of some were sharp and others hazy, the artist would have been using relative clarity.
    d. Had the artist painted the trees so that there was a gradual change from a coarse, distinct to a fine, indistinct texture, texture gradient would have been used to convey depth.

12. c. is the answer. (p. 247)
   b. & d. Linear perspective is the apparent convergence of parallel lines as a cue to distance.

13. d. is the answer. Nearby objects reflect more light to the eyes. Thus, given two identical objects, the brighter one seems nearer. (p. 248)
    a. & b. Because of the principle of size constancy, an object's perceived size is unaffected by its distance, angle of viewing, or illumination.

14. c. is the answer. This is an illustration of the size-distance relationship in depth perception. (pp. 250–251)
    a. Although the frisbee's shape is perceived as constant (even as the shape of its retinal image changes), this is not a cue to its distance.
    b. Relative motion is the perception that when we move, stationary objects at different distances change their relative positions in our visual image, with those closest moving most. In this
example, only the frisbee is moving.

15. a. is the answer. (p. 251)

16. c. is the answer. Although Leon’s other senses would have told him his car was not moving, the visual images of the other cars moving forward “captured” his awareness and created the perception that he was rolling backward. (p. 242)

a. Relative motion is a distance cue that occurs when stationary objects appear to move as we move. Just the opposite is happening to Leon.

b. & d. Continuity and proximity are Gestalt principles of grouping, rather than cues to distance.

17. d. is the answer. (p. 265)

a. Telepathy is the claimed ability to “read” minds.

b. Clairvoyance refers to the claimed ability to perceive remote events.

c. Precognition refers to the claimed ability to perceive future events.

18. d. is the answer. (pp. 265–266)

19. c. is the answer. She perceives the line for the road as continuous, even though it is interrupted by lines indicating other roads. (p. 244)

a. Closure refers to the perceptual filling in of gaps in a stimulus to create a complete, whole object.

b. Similarity is the tendency to perceive similar objects as belonging together. On a road map, all the lines representing roads appear similar. Thus, this cue could not be the basis for Colleen’s ability to trace the route of a particular road.

c. Proximity is the tendency to group objects near to one another as a single unit.

20. c. is the answer. (p. 251)

a. If perception were entirely based on the physical characteristics of a stimulus (“bottom-up”), lack of experience with a carpentered environment would not reduce sensitivity to the illusion.

b. Principles of grouping, depth perception, and sensitivity to illusions all demonstrate that perception often is predictable.

**Essay Question**

1. **Proximity.** We tend to perceive items that are near each other as belonging together. Thus, a small section of dancers or members of a marching band may separate themselves from the larger group in order to form part of a particular image.

2. **Similarity.** Because we perceive similar figures as belonging together, choreographers and band directors often create distinct visual groupings within the larger band or dance troupe by having the members of each group wear a distinctive costume or uniform.

3. **Continuity.** Because we perceive smooth, continuous patterns rather than discontinuous ones, dancers or marching musicians moving together (as in a column, for example) are perceived as a separate unit.

4. **Closure.** If a figure has gaps, we complete it, filling in the gaps to create a whole image. Thus, we perceptually fill in the relatively wide spacing between dancers or marching musicians in order to perceive the complete words or forms they are creating.

**Key Terms**

**Writing Definitions**

1. **Selective attention** is the focusing of conscious awareness on a particular stimulus out of all of those that we are capable of experiencing. (p. 237)

2. **Inattentional blindness** is a perceptual error in which we fail to see a visible object when our attention is directed elsewhere. (p. 238)

3. **Visual capture** is the tendency for vision to dominate the other senses. (p. 242)

4. **Gestalt** means “organized whole.” The Gestalt psychologists emphasized our tendency to integrate pieces of information into meaningful wholes. (p. 242)

5. **Figure-ground** refers to the organization of the visual field into two parts: the figure, which stands out from its surroundings, and the surroundings, or background. (p. 243)

6. **Grouping** is the perceptual tendency to organize stimuli into coherent groups. Gestalt psychologists identified various principles of grouping. (p. 243)

7. **Depth perception** is the ability to see objects in three dimensions although the images that strike the retina are two-dimensional; it allows us to judge distance. (p. 245)

8. The **visual cliff** is a laboratory device for testing depth perception, especially in infants and young animals. In their experiments with the visual cliff, Gibson and Walk found strong evidence that depth perception is at least in part innate. (p. 245)

9. **Binocular cues** are depth cues that depend on information from both eyes. (p. 245)

*Memory aid: Bi- indicates “two”; ocular means something pertaining to the eye. Binocular cues are cues for the “two eyes.”*
10. **Retinal disparity** refers to the differences between the images received by the left eye and the right eye as a result of viewing the world from slightly different angles. It is a binocular depth cue, since the greater the difference between the two images, the nearer the object. (p. 246)

11. **Convergence** is a neuromuscular binocular depth cue based on the extent to which the eyes converge, or turn inward, when looking at near or distant objects. The more the eyes converge, the nearer the objects. (p. 246)

12. **Monocular cues** are depth cues that depend on information from either eye alone. (p. 246)

Memory aid: *Mono-* means one; a monocle is an eyeglass for one eye. A **monocular cue** is one that is available to either the left or the right eye.

13. The **phi phenomenon** is an illusion of movement created when two or more adjacent lights blink on and off in succession. (p. 250)

14. **Perceptual constancy** is the perception that objects have consistent lightness, color, shape, and size, even as illumination and retinal images change. (p. 250)

15. **Perceptual adaptation** refers to our ability to adjust to an artificially displaced or even inverted visual field. Given distorting lenses, we perceive things accordingly but soon adjust by learning the relationship between our distorted perceptions and the reality. (p. 256)

16. **Perceptual set** is a mental predisposition to perceive one thing and not another. (p. 257)

17. **Human factors psychology** explores how people and machines interact and how machines and physical environments can be adapted to human behaviors and thus to increase safety and productivity. (p. 261)

18. **Extrasensory perception (ESP)** refers to the controversial claim that perception can occur without sensory input. Supposed ESP powers include telepathy, clairvoyance, and precognition. (p. 246)

Memory aid: _Extra-_ means “beyond” or “in addition to”; **extrasensory perception** is perception outside or beyond the normal senses.

19. **Parapsychology** is the study of ESP, psychokinesis, and other paranormal forms of interaction between the individual and the environment. (p. 264)

Memory aid: _Para-_ is “beyond”; thus, paranormal is beyond the normal and **parapsychology** is the study of phenomena beyond the realm of psychology and known natural laws.

**Cross-Check**

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FOCUS ON VOCABULARY AND LANGUAGE

Selective Attention and Perceptual Illusions

Page 238: Now, suddenly, your attentional spotlight shifts. Your feet feel encased, your nose stubbornly intrudes on the page before you. **Selective attention** refers to our tendency to focus on only a small part of what is possible for us to experience. If you do attend to more aspects of your experience (your attentional spotlight shifts), you will be surprised at the amount of stimulation you process without awareness, such as the feel of the shoes on your feet (your feet feel encased) and the fact that your nose actually blocks your line of vision (your nose stubbornly intrudes on the page).

Page 238: . . . you may draw a blank . . . This means that you do not achieve the result you want; you don't succeed. When you attend to only one voice among many (the cocktail party effect), you may be unable to say what someone else, who was clearly within your hearing range, was saying (you draw a blank). Interestingly, you would very likely hear your own name if it were spoken by this person.

Page 238: . . . a young woman carrying an umbrella sauntered across the screen. In this experiment, subjects had to watch a video of basketball players and signal when the ball was passed. Because of their intense selective attention, they generally failed to notice a female walking slowly (sauntering) through the players.

Page 239: . . . we experience pop-out, when a strikingly distinct stimulus, such as the only smiling face in Figure 6.4, draws our eye. A very unique object or event (a strikingly distinct stimulus) will automatically attract our attention (it draws our eye). This experience is called the pop-out phenomenon.

Page 242: . . . (much as we perceive a voice from the ventriloquist’s dummy). A ventriloquist is an entertainer who makes the audience believe his voice is coming from a silent doll (dummy). Due to the phenomenon of visual capture we assume that because the doll’s mouth is moving and the ventriloquist’s is not, the voice is coming from the dummy.

Page 242: There is more to touch than meets the skin. As noted earlier, “there is more to this than meets the eye” is a common expression meaning something is going on beyond the obvious or the apparent. In this variation of the expression, Myers is noting that there is a hearing phenomenon similar to visual capture (which is the tendency for vision to dominate the other senses). Experimental participants’ sense of hearing tended to dominate their sense of touch, creating the illusion of receiving more than a single touch (thus, there is more to touch than meets the skin).

Perceptual Organization

Page 243: . . . yen . . . This means to have a desire or deep need (yen) to do something. Myers notes that our brain’s desire (yen) to put together bits and pieces of sensory input into coherent units involves both “bottom-up” and “top-down” processing. We actively impose structure and infer meaning (top-down) and are not simply registering sensory stimulation (bottom-up) in a passive manner. Thus, there is no sharply defined line (the boundary is fuzzy) between sensory and perceptual processes.

Page 244: Usually, these grouping principles help us construct reality. Sometimes, however, they lead us astray. Although we put together elements of sensation through active organization (the Gestalt grouping principles) and end up with a unitary experience, we sometimes make mistakes in the process (we are led astray).

Page 245: Their mothers then coaxed them to crawl out onto the glass. In the experiment with the visual cliff, 6- to 14-month-old children were gently encouraged (coaxed) by their mothers to move, on their hands and knees (crawl), onto the invisible glass top on the “deep” side of the apparatus. Most could not be persuaded to do so, leading to the conclusion that depth perception may be innate (inborn). The idea for this famous experiment came to Gibson when she was at the Grand Canyon and wondered if a young child (toddler) looking (peering) over the edge of the canyon would recognize the steep, unsafe, incline (dangerous drop-off) and retreat (draw back).

Page 246: The floating finger sausage (Figure 6.9). Try the demonstration and you will experience the effect of retinal disparity and see a tubular shape (finger sausage) made by your brain from the two different images of your fingers.

Page 248: As we move, objects that are actually stable may appear to move. Things that are stationary and do not move (stable objects) seem to move relative to us when we move.

Page 250: A motion picture creates this illusion by flashing 24 still pictures each second. When we view a film, we do not experience a rapid series of non-moving images (still pictures); rather, our brain constructs the perceived motion. This is called stroboscopic movement.

Page 251: Take away these distance cues—by looking at the horizon Moon (or each monster or each bar) through a paper tube—and the object immediate-
ly shrinks. Observers have argued for centuries about why the Moon near the horizon seems so much larger than the Moon overhead in the sky. One explanation involves the interaction of perceived size and perceived distance. Distance cues at the horizon make the Moon appear farther away than when it is overhead (where there are no distance cues). The Moon casts the same retinal image in both situations, so the image that appears to be more distant (i.e., near the horizon) will therefore seem larger. We can eliminate the distance cues by looking at the Moon through a rolled-up piece of paper (paper tube); the Moon will appear much smaller (it shrinks).

Page 251 (Figure 6.15): . . . carpentered . . . A carpenter is someone who constructs objects, houses, furniture, boats, etc., out of wood. In Western cultures many of these objects are angular, with 90° angles and corners, rather than circular or round. Our experiences with rectangular shapes (carpentered context) contributes to the Müller-Lyer illusion.

Perceptual Interpretation

Page 255: Most had been born with cataracts—clouded lenses that allowed them to see only diffused light, rather as you or I might see a diffuse fog through a Ping-Pong ball sliced in half. People born with cataracts cannot see clearly because the normally transparent lenses in their eyes are opaque. To understand what their vision is like, imagine what you would see if you had your eyes covered with half of a small, white, plastic ball that is used in table tennis (Ping-Pong). When cataract patients have their vision restored, after being blind since birth, they can sense colors and distinguish figure from ground (innate capacities), but they cannot visually recognize things that were familiar by touch.

Page 256: Given a new pair of glasses, we may feel slightly disoriented, even dizzy. When we start wearing ordinary eyeglasses or when we are fitted with a new pair, our initial reaction is a little confusion and vertigo (dizziness). However, we quickly adapt within a few days. We can also adapt to lenses that distort what we are looking at by 40° to one side, and even to distortion lenses that invert reality (turn the visual image upside down—a topsy-turvy world). Fish, frogs, salamanders, and young chickens cannot adapt in this way.

Page 257: As everyone knows, to see is to believe. As we also know, but less fully appreciate, to believe is to see. The expression “seeing is believing” means that we put much reliance on visual information when deciding (believing) what is true. Myers shows us that, on the contrary, what we believe may actually affect what we see. Our assumptions, expectations, and mental predispositions (perceptual sets) determine, to a large extent, our perceptions.

Page 257: In 1972, a British newspaper published genuine, unretouched photographs of a “monster” in Scotland’s Loch Ness . . . People who had heard about, or believed in, the Loch Ness Monster before seeing a very ambiguous picture of a log were more inclined to see what they expected to see (i.e., a monster) because of their perceptual set.

Page 258: Clearly, much of what we perceive comes not just from the world “out there” but also from what’s behind our eyes and between our ears. Myers is reiterating the point that our mental predispositions, expectations, beliefs, etc. (what’s behind our eyes and between our ears) influence much more of what we perceive than the sensory stimulation received from the outside world.

Page 261: Some differences, it seems, exist merely in the eyes of their holders. The familiar saying “beauty is in the eye of the beholder” means that what is perceived as beautiful has more to do with what the perceiver subjectively believes than with the absolute qualities of the person or object being judged. Likewise, our stereotypes (rigid, conventional ideas or beliefs) about gender or culture can greatly influence (color) what is perceived.

Is There Extrasensory Perception?

Page 266: . . . uncanny . . . People who have dreams that coincide, by pure chance, with later events often have an eerie or strange (uncanny) feeling about the accuracy of their apparent precognitions.

Page 267: . . . mind-blowing performances. Some alleged (so-called) psychics, using magic tricks and not extrasensory ability, unethically manipulate and deceive (exploit) gullible (unquestioning) audiences with impressive and wondrous demonstrations (mind-blowing performances). As Myers points out, after many, many years of investigation and thousands of experiments there is no scientific evidence that extrasensory abilities exist (believers in the paranormal need only produce one person who can demonstrate a single, reproducible ESP phenomenon to refute the claim that there is no ESP—this has not happened).

Page 267: But some people also have an unsatisfied hunger for wonderment, an itch to experience the magical. Some people are predisposed to believe in ESP because they have a deeply felt need (unsatisfied hunger) for surprise and amazement and a strong ambition or desire (an itch) to explore the mysterious and unknown.